Studyguide of Module 33: Effective use of ICT in Education

Are you interested in ICT in education and do you want to explore this subject at your own convenience? In this online course you will get acquainted with various e-learning technologies and you will learn about ways to apply these to you own educational practice, supported by an e-coach and in collaboration with peers.

Learning objectives of the course

Upon completion of this course, the teacher will be able to:

1. Give an overview of the various possibilities that e-learning technologies have to offer and the tools and support available at DUT (beginner)
2. Describe the possibilities of ICT in one of your own courses in such a way that learning objectives can be more easily achieved by students (beginner + intermediate)
3. Make an underpinned choice from the array of e-learning Technologies matching the learning objectives of the course (beginner + intermediate)
4. Create a digital learning object (for example a video, a digital exam, a weblecture) with corresponding implementation plan (intermediate)
5. Reflect on the chosen approach and the usefulness of the deliverable for your course, using feedback of your peer and coach (intermediate)

Competences addressed in this module: no. 11 (see list of 3TU competencies), " The teacher is able to use technological tools in a pedagogical way."

Learning resources
- digital course materials will be available in Blackboard
- teachers will be invited to apply theory offered in the module materials to their own courses

Learning activities

Before starting this module, there is a kick-off meeting to determine prior knowledge. Based on the outcomes, an appropriate route through the module material will be set. (See the document *'Compose your own course'*)

In this module you will study online courses independently and consult with peers and/or experts about the contents in order to get acquainted with different types of e-learning, develop e-learning objects and reflect on implementation strategies. If needed or requested, face to face or online meetings can be arranged. (See the *Course Schedule* at the end of this document)

Duration: 3 months maximum (including proficiency assignment) with 40 hours of study load.

Assessment

You are requested to complete a proof of competence about getting acquainted with e-learning and about ways to apply it to your courses (beginner), or designing e-learning objects and reflecting on the chosen approach for implementation (intermediate). You will have to collect feedback from your peers and trainer and reflect on that. The proof of

competence for both target groups (beginner as well as intermediate) are described below. The proof of competence consists of three phases / assignments.

Proof of competence (beginner)

Exploring the field of e-learning

This proof of competence is for teachers who have little experience with the application of ICT in education (ICTO) and who would like to become more familiar with the possibilities that ICTO can offer for their courses.

This proof of competence is divided into three sections, which correspond to the various phases in the teaching process (orientation, application, reflection). The phase products together constitute the Proficiency assignment. The time available for completing the Proficiency assignment is three months (equivalent to the duration of the course), with each phase taking about one month. The first two stages are likely to take longer than the last.

Learning Objectives

Upon completion of this assignment, the teacher will be able to:

1. Give an overview of the various possibilities that e-learning technologies have to offer and the tools and support available at DUT;
2. Describe the possibilities of ICT in one of your own courses in such a way that learning objectives can be more easily achieved by students;
3. Make an underpinned choice from the array of e-learning Technologies matching the learning objectives of the course.

Instructions

Phase 1: Orientation
The teacher will create a mind map that addresses the following:

4. The various technologies available for education
5. The benefits of the various technologies for education
6. The technical infrastructure of TU Delft
7. The support for ICT education available at TU Delft
8. The consulted sources upon which the mind map is based
Use at least Building block 1. *introduction* for this assignment. Tip: on the ICTO site, www.icto.tudelft.nl you can find information on the E-learning systems available at DUT.
Phase product: Mind map

Phase 2: Application in teaching

1: The teacher will conduct a SWOT analysis of a course in which he/she is involved, determining which technologies (from the orientation phase) could help to improve the course and in which ways.

2: Each teacher will select one technology and support this selection by preparing a brief

description of the expected outcomes of its use (i.e. how does the technology support students in the learning process?), relating the technology to learning objectives, teaching methods and testing (i.e. embedding in the course).

We advise you to use Building block 4 for this assignment
Phase product: SWOT analysis (description of the current situation and the desired situation)

Phase 3: Reflection
The teacher will determine what is needed in order to achieve the desired situation, and will prepare plans describing the steps necessary for embedding the technology into the course.
Phase product: Action plan

Feedback

Each phase product must be submitted by the end of the month in which it is assigned. These products will be posted to BB in the course environment, thus making them publicly available to current or future participants. The trainer/coach and a peer will provide feedback for each phase product according to a specific format.

Evaluation

The phase products will be assessed against the following criteria:

Phase 1: Mind map

1. Completeness of the image of the teacher's field of e-learning and its benefits to education
2. Sources consulted
3. Completeness of the teacher's image of the opportunities offered by TU Delft for the application of ICT in education (e.g. range of tools, support)
4. Quality of the relationships presented in the mind map

Phase 2: SWOT analysis

1. Extent to which the relationship between educational challenges and the use of ICT in education is supported
2. Extent to which the ICTO solution is integrated into the overall learning objectives, teaching methods and testing (i.e. the chosen technology promotes the achievement of learning objectives)
3. Relevance of the threats and opportunities

Phase 3: Action plan

1. Extent to which the teacher is aware of what is involved in the application of ICT in education and of their role in this process
2. Quality of reflection

Time allocation total: 40 hours

Proof of Competence (intermediate)

Implementation of specific e-learning applications in individual teaching practice

This proof of competence is for teachers who have general knowledge of ICT in education (ICTO) applications and who know which applications they would like to investigate/use in their courses.

This proof of competence is divided into three sections, which correspond to the various phases in the teaching process (orientation, application, reflection). The phase products together constitute the Proficiency assignment. The time available for completing the Proficiency assignment is three months (equivalent to the duration of the course), with each phase taking about one month. The first two stages are likely to take longer than the last.

Learning Objectives

Upon completion of this assignment, the teacher will be able to:

1. Describe the possibilities of ICT in one of your own courses in such a way that learning objectives can be more easily achieved by students;
2. Make an underpinned choice from the array of e-learning Technologies matching the learning objectives of the course;
3. Create a digital learning object (for example a video, a digital exam, a weblecture) with corresponding implementation plan;
4. Reflect on the chosen approach and the usefulness of the deliverable for your course, using feedback of your peer and coach.

Instructions

Phase 1: Preparation
The teacher will write an embedding plan that addresses the following:

1: The teacher will describe the instructional challenges experienced in their teaching and which (challenges) they would like to address using ICTO applications. The teacher will explain why he/she would like to learn more about this ICTO application and how they think that it could contribute to their teaching practice.

2: The teacher will select one ICTO application that is expected to be able to address the educational challenge adequately.

3: The teacher will support their choice by preparing a brief description of the expected outcomes of using the tool (i.e. how will the tool support students in the learning process?), relating the tool to learning objectives, teaching methods and testing.

4: The teacher will explain the concrete embedding of the application in the course (blended approach). How do various teaching methods interact to produce an integrated course?

5: The teacher will describe the teaching professionalization (e.g. components of the e-learning module, interviews with experts) necessary in order to be successful in deploying and mastering their selected tools.

6: The teacher will describe what is necessary in technical terms in order to be successful in deploying, mastering and/or receiving advice about their selected tools (for example via ELS).

7: The teacher will describe what they expect of their students. How will the plan ensure that the students will do what the teacher has in mind? What will be done with the results, how and when will feedback take place?

We advise you to use Building block 4. *Course planning* for this assignment

Phase product: Embedding plan

Phase 2: Implementation
The teacher will develop an actual digital learning object (e.g. screencast, digital test, tutorial, wiki, online question-and-answer session).
Phase product: Practical example of ICTO

Phase 3: Reflection
The teacher will reflect upon the approach and final product according to such aspects as the manner in which it was approached, support for the selection of software (e.g. comparisons made, advice sought), what did/did not go well, what was learned, the usefulness of the final product: relevance to the objectives and target audience, whether the teacher has sufficient knowledge/equipment to develop the tool further and implement it in teaching practice.
Phase product: Reflection report (maximum 1-2 A4 pages)

Feedback

Each phase product must be submitted by the end of the month in which it is assigned. These products will be posted to BB in the course environment, thus making them publicly available to current or future participants. The trainer/coach and a peer will provide feedback for each phase product according to a specific format.

Evaluation

The phase products will be assessed against the following criteria:

Phase 1:

5. Extent of support for the selected ICT solution (e.g. good problem analysis, weighing of alternatives, use of/references to sources, advice obtained, best practices).
6. Extent to which the ICTO solution is integrated into the overall learning objectives, teaching methods and testing (e.g. the tool promotes the achievement of the objectives, it is well embedded in teaching, the technology is sufficiently clear).

Phase 2:

7. Quality of the practical example of ICTO: clarity regarding what is expected of students, ease of use for students, optimisation of the tool's potential
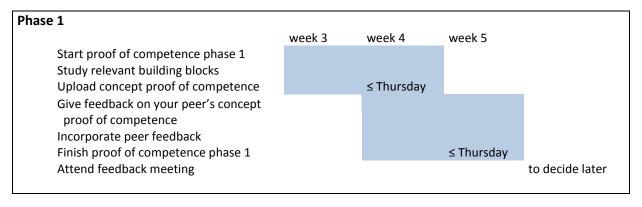
Phase 3:

8. Extent to which the feedback from the trainer/coach and peer is integrated into the phase product on 'reflection'
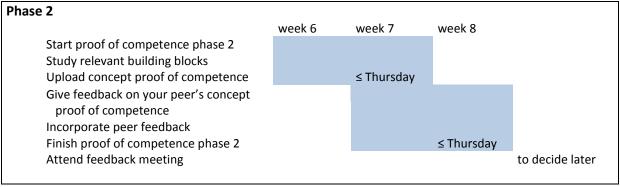9. Quality of reflection
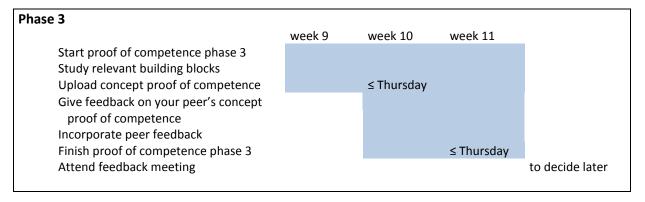
Time allocation total: 40 hours

Course Schedule (*Example*)

Preparation for kick-off

	week 1	week 2	
Read information on Blackboard			
Fill out kick-off form			
		before	
Upload kick-off form		meeting	
Attend kick-off meeting		date	

Phase 1

	week 3	week 4	week 5	
Start proof of competence phase 1				
Study relevant building blocks				
Upload concept proof of competence		≤ Thursday		
Give feedback on your peer's concept proof of competence				
Incorporate peer feedback				
Finish proof of competence phase 1			≤ Thursday	
Attend feedback meeting				to decide later

Phase 2

	week 6	week 7	week 8	
Start proof of competence phase 2				
Study relevant building blocks				
Upload concept proof of competence		≤ Thursday		
Give feedback on your peer's concept proof of competence				
Incorporate peer feedback				
Finish proof of competence phase 2			≤ Thursday	
Attend feedback meeting				to decide later

Phase 3

	week 9	week 10	week 11	
Start proof of competence phase 3				
Study relevant building blocks				
Upload concept proof of competence		≤ Thursday		
Give feedback on your peer's concept proof of competence				
Incorporate peer feedback				
Finish proof of competence phase 3			≤ Thursday	
Attend feedback meeting				to decide later

≤ means before or on this date
Time to study and work on proof of competence is marked by:

TUDelft Delft University of Technology